

CALIFORNIA STATE SCIENCE FAIR 2002 PROJECT SUMMARY

Name(s)

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Project Number

22015

Project Title

The Effect of Different Substances on How Many Bacteria Colonies They Create in Your Saliva

Abstract

Objectives/Goals

The purpose of our experiment was to find out which substance created the most bacteria in your saliva. We used sugars, salts, and fats.

Methods/Materials

There were only two test subjects in this experiment, as we didn't have enough money or equitment to expand out test pool. Both my self and Alice were the test subjects. The following is a condensed versiol of how we completed our tests. After our agar media was made, we put the dishes in the autoclave to ensusre that no contamination was on the media to make sure the agar was pure. Next we cleaned our our mouths with toothpaste and innoculated six petri dishes with just saliva, no substance (three tests per subject per substance). This was repeated with the different substances. Once all 24 plates were innoculated, we incubated them at 30 degrees cenigrate for 48 hours. We then compaired (by counting bacteria colonies in randon squares if the colonies were too numerous to count for the entire dish) bacteria colonies, in the petri dish, and averaged the bacteria dounts for each substance per person. We also compared all six of the substances tested against each other to color to our final result.

Results

In our results, the substance salt produced the most bacteria for Alice, for Denali, sugar created the most bacteria. Combined together, butter produced he most bacteria.

Conclusions/Discussion

We concuded that just like all animals, bacteria adapt to their surroundings. So the bacteria in one persons mouth is different from bacteria in another person's mouth, just like fingerprints. Bacteria might different in other's mouth because of different dictary habits, the temperature in your mouth might be slightly higher than in another person's mouth, and brushing habits might be different.

Another thing we determined from this project was that there is one "bad" bacteria in your mouth called Streptous mutants or S. mutants which thrives or refined sugar. Most of the other bacteria in your mouth receive calories and sugar from the good that goes into your mouth. That is why we got butter (our fat) with the highest counts because it not only contains alot of calories, it also contains milk which is not a base or acid and being neutral we believe thats why butter had the highest average of colonies and no other counts were very close to the butter tests. We determined that butter most likely does not negatively or positivly affect the growth of bacteria cells.

Summary Statement

The purpose of our experiment was to find out which substance out of sugar, salt, and butter creats the most bacteria in your saliva.

Help Received

Mother helped get board, David Perez at Monterey health dept. helped make agar, Granite Canyon lab. used to incubate petri dishes.